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EXAMINER

ROCHE, TRENTON J

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 02/25/2004

11

Please find below and/or attached an Office communication concerning this application or proceeding.

4

Office Action Summary

Application No.

09/732,467

Applicant(s)

MARSH ET AL.

Examiner

Trent J Roche

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10,12-21 and 27-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-10,12-21 and 27-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This action is responsive to Amendment C filed on 23 January 2004.
2. As per Applicant's request, amended claims 1, 3-10, 12, 13, 16, 18, 20 and 21 have been entered. Claims 2, 11 and 22-26 have been cancelled. New claims 27-33 have been entered. Claims 1, 3-10, 12-21 and 27-33 are pending in the application.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,895,911 to Angelo et al.

Regarding claim 1:

Angelo et al teach:

- a computer system communicatively coupled to a network ("a computer system having a receiving computer and a source computer" in col. 1 lines 56-57)
- a programmable non-volatile memory ("stores the flash information...in NVRAM" in col. 3 lines 21-22)
- at least one microprocessor operatively coupled to execute at least one instruction from the programmable non-volatile memory in response to a boot request, the microprocessor configured to controllably write to the programmable non-volatile memory ("the receiving

computer is placed in a predetermined operating state, such as by going through a cold boot power cycle” in col. 3 lines 31-33. Because the computer is placed into an operating state, the microprocessor must have executed an instruction from memory. Due to the nature of an invention intended to flash the BIOS of a computer, the microprocessor must inherently be configured to controllably write to the non-volatile memory, as the BIOS is stored on said non-volatile memory, and to flash the BIOS involves controllably writing a new BIOS to the non-volatile memory.)

- at least one fixed storage device operatively coupled to the at least one microprocessor (“at least a processor unit that may be coupled to a storage unit” in col. 2, lines 36-37)
- the fixed storage device containing a boot image that is configured with appropriate instruction code to transition the microprocessor to an operational mode (“the receiving computer is placed in a predetermined operating state” in col. 3 lines 31-33)
- wherein the fixed storage device receives and stores a boot memory (“the receiving computer receives the flash information and stores the flash information such as onto a fixed disk...” in col. 3, lines 20-21)
- a system loader (“the receiving computer is re-booted, such a by going through another power cycle, and the BIOS information is enabled” in col. 3 lines 38-40. Because the firmware is the “backbone of operations of (a) computer,” as stated in col. 1 lines 14-15 of Angelo et al, the boot memory or flash update must inherently have a system loader.)
- a configuration file (“the BIOS flash is carried out” in col. 3 line 37. A configuration file is inherently present, an update could not happen without one.)

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- executable files configured to write a firmware upgrade to the programmable non-volatile memory (“the receiving computer receives the flash information and stores the flash information such as onto a fixed disk...” in col. 3, lines 20-21)

substantially as claimed.

Regarding claim 4:

The rejection of claim 1 is incorporated, and further, Angelo et al disclose a fixed storage device receiving and storing a new firmware (“the receiving computer receives the flash information and stores the flash information such as onto a fixed disk...” in col. 3, lines 20-21)

Regarding claim 5:

The rejection of claim 1 is incorporated, and further, Angelo et al disclose at least one fixed storage device receiving and storing an application (“the receiving computer receives the flash information and stores the flash information such as onto a fixed disk...” in col. 3, lines 20-21)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 6-10, 12-17 and 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,895,911 to Angelo et al in view of U.S. Patent 6,266,809 to Craig et al.

Regarding claim 3:

The rejection of claim 2 is incorporated, and further, Angelo et al do not explicitly disclose an executable file comprising an install application. Craig et al disclose in an analogous firmware updating system the use of an install application for upgrading the firmware of a system in col. 8 lines 50-51. It would have been obvious to someone of ordinary skill in the art at the time the invention was made to include an install application in the firmware upgrade of Angelo et al in order for the firmware upgrade to be carried out with a lesser degree of human interaction.

Regarding claim 6:

The rejection of claim 5 is incorporated, and further, Angelo et al do not explicitly disclose that the flash application comprises a bootable kernel. Craig et al disclose in an analogous firmware updating system a bootable kernel ("the update operating system is a boot image of the firmware update..." in col. 3 lines 61-63.) It would have been obvious to someone of ordinary skill in the art at the time the invention was made to include a bootable kernel in the flash application disclosed by Angelo et al, as this would enable a firmware update to occur when not connected to a network environment, such as updating the firmware off a floppy disk or a CD-ROM.

Regarding claim 7:

The rejection of claim 6 is incorporated, and further, Angelo et al do not explicitly disclose a bootable kernel comprising an operating system. Craig et al disclose in an analogous firmware updating system a firmware update operating system which is downloaded and initiated to update the firmware in col. 3 lines 43-45. It would have been obvious to someone of ordinary skill in the art

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at the time the invention was made to include an operating system in the firmware update method of Angelo et al, as this would enable the bootable kernel to load an alternate operating system to be loaded onto the system disclosed by Angelo et al.

Regarding claim 8:

The rejection of claim 6 is incorporated, and further, Angelo et al do not explicitly disclose a bootable kernel comprising a file management system. Note the rejection regarding claim 7. A file management system is interpreted to be an operating system. It would have been obvious to someone of ordinary skill in the art at the time the invention was made to include file management system in the firmware update method of Angelo et al, as this would enable the bootable kernel to access files on the system disclosed by Angelo et al.

Regarding claim 9:

Angelo et al teach:

- a computer network, comprising a plurality of computer systems communicatively coupled to a network infrastructure (“transmitting flash information from a transmitting computer to a receiving computer, such as in a network configuration...” in col. 5 lines 36-38)
- containing a common firmware version designated for replacement (“this information is used to overwrite at least a portion of the BIOS...” in col. 3 lines 5-6)
- a fixed storage device containing a boot image (“stores the flash information such as onto a fixed disk” in col. 3 line 21)

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- having appropriate instruction code suited to transition the computer system to an operational mode (“the receiving computer is placed in a predetermined operating state...” in col. 3 lines 32-33)
- a user input device communicatively coupled to at least one computer system communicatively coupled to the network infrastructure, at least one computer system configured with write access permission for the respective fixed storage device associated with each of the plurality of computer systems (Note Fig. 1 and col. 2 lines 53-55 make reference to a “code provider” node which transmits information to other nodes in the network)
- wherein an input from the user input device initiates a transfer of a patch memory map and a firmware upgrade patch to the plurality of computer systems. (“the data or code information transmitted from the code provider...comprises update information for updating...a portion of the (BIOS)” in col. 2 line 66 to col. 3 line 2.

Angelo et al do not explicitly disclose the firmware upgrade patch comprising a bootable kernel.

Craig et al disclose in an analogous firmware updating system a bootable kernel (“the update operating system is a boot image of the firmware update...” in col. 3 lines 61-63.) It would have been obvious to someone of ordinary skill in the art at the time the invention was made to include a bootable kernel in the flash application, as this would enable a firmware update to occur when not connected to a network environment, such as updating the firmware off a floppy disk or a CD-ROM.

Regarding claim 10:

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The rejection of claim 9 is incorporated, and further, Angelo et al teach a the firmware upgrade patch and the patch memory including instruction code necessary to support replacement of the common firmware version by each of the respective plurality of computer systems as claimed (“transferring the flash information from the source computer to the receiving computer, with the flash information including the flash code, and flash code instructions and...” in col. 1 lines 58-61)

Regarding claim 12:

The rejection of claim 9 is incorporated, and further, the limitation regarding the operating system would be obvious in view of Craig et al for the reasons set forth in connection with claim 7.

Regarding claim 13:

The rejection of claim 10 is incorporated, and further, the limitation regarding the file management system would be obvious in view of Craig et al for the reasons set forth in connection with claim 8.

Regarding claim 14:

Angelo et al teach:

- a computer system coupled to a network (“a computer system having a receiving computer and a source computer” in col. 1 lines 56-57)
- accessing data stored on a memory device that retains data when power is removed from the memory device, accessing means responsive to power being applied to the computer system (“stores the flash information...in NVRAM. Then...the flash information...is subjected to a validation process” in col. 3 lines 21-24. Further, to perform these validation operations on

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the flash information stored on the non-volatile memory NVRAM, the NVRAM must have an electrical signal present, therefore, the system is being responsive to applied power.

- means for selectively writing to the memory device in response to a remote input designated to initiate the replacement of the data stored on the memory device (Note Fig. 1 and col. 2 lines 53-55, which make reference to a “code provider” node which transmits information to the other nodes. Further, as stated in col. 3 lines 21-22, this information can be stored in NVRAM.
- stored on a fixed storage device within the computer system in response to the remote input (“the receiving computer receives the flash information and stores the flash information such as onto a fixed disk...” in col. 3 lines 20-21.

Angelo et al disclose storing information on a fixed storage device. However, Angelo et al do not explicitly disclose the storage of the new data and a bootable kernel. Craig et al teach the downloading of a bootable kernel (“update boot image” in col. 6 line 27) which contains the new firmware data (“The update boot image may contain firmware update images” in col. 6 lines 27-28). It would have been obvious to someone of ordinary skill in the art at the time the invention was made to store the new data and a bootable kernel on a fixed disk, as this would enable the firmware update to be run when not connected to a network.

Regarding claim 15:

Note rejection regarding claim 14.

Regarding claim 16:

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The rejection of claim 14 is incorporated, however, Angelo et al do not explicitly disclose storing an operating system and a file management system, and means for modifying an initial system loader address in response to a remote input. Craig et al disclose in an analogous firmware updating system the downloading of a firmware update operating system, replacing the standard operating system, as stated in col. 9 lines 30-32. Because a firmware update operating system is downloaded to boot from rather than the standard operating system for the purpose of updating the firmware, the address of the system loader must inherently be modified to point to the firmware update operating system, so that when the computer is rebooted, it does not boot into the standard operating system. It would have been obvious to someone of ordinary skill in the art at the time the invention was made to modify the system loader address in Angelo et al's disclosed system using Craig et al's teaching, as this would enable the computer system disclosed by Angelo et al to utilize the updated operating system.

Regarding claim 17:

The rejection of claim 15 is incorporated, however, Angelo et al do not explicitly disclose a programmable non-volatile memory comprising an electrically erasable programmable read only memory. Craig et al disclose in col. 5 lines 28-31, "The memory may include...electronically erasable programmable read only memory (EEPROM)". It would have been obvious to someone of ordinary skill in the art at the time the invention was made to use an EEPROM in the system disclosed by Angelo et al, as this would enable a user to modify information stored in the read-only memory of Angelo et al.

Regarding claim 27:

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Angelo et al teach:

- a computer system communicatively coupled to a network (“a computer system having a receiving computer and a source computer” in col. 1 lines 56-57)
- a programmable non-volatile memory having a first firmware (“stores the flash information...in NVRAM” in col. 3 lines 21-22. The memory inherently has a first firmware version, as the new copy which is downloaded is intended to replace this first version.)
- at least one microprocessor operatively coupled to controllably write to the programmable non-volatile memory and execute at least one instruction from the programmable non-volatile memory in response to a boot request (“the receiving computer is placed in a predetermined operating state, such as by going through a cold boot power cycle” in col. 3 lines 31-33. Because the computer is placed into an operating state, the microprocessor must have executed an instruction from memory. Due to the nature of an invention intended to flash the BIOS of a computer, the microprocessor must inherently be configured to controllably write to the non-volatile memory, as the BIOS is stored on said non-volatile memory, and to flash the BIOS involves controllably writing a new BIOS to the non-volatile memory.)
- at least one fixed storage device operatively coupled to the at least one microprocessor (“at least a processor unit that may be coupled to a storage unit” in col. 2, lines 36-37)
- the storage device containing a firmware patch comprising a patch memory map comprising an index (“the data or code information transmitted from the code provider...comprises update information for updating...a portion of the (BIOS)” in col. 2 line 66 to col. 3 line 2.

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- a second firmware different from the first firmware (“the BIOS flash is carried out...” in col. 3 line 37. To update the BIOS, a second firmware different from the firmware installed must be used)
- a flash application comprising a firmware update logic (Note Fig. 5 and the corresponding section of the disclosure)
- a non-volatile memory interface (“in NVRAM...” in col. 3 line 22)

Angelo et al do not explicitly disclose the flash application comprising a bootable kernel. Craig et al disclose in an analogous firmware updating system a bootable kernel (“the update operating system is a boot image of the firmware update...” in col. 3 lines 61-63.) It would have been obvious to someone of ordinary skill in the art at the time the invention was made to include a bootable kernel in the flash application, as this would enable a firmware update to occur when not connected to a network environment, such as updating the firmware off a floppy disk or a CD-ROM.

Further, Angelo et al do not explicitly disclose an install application. Craig et al disclose in an analogous firmware updating system the use of an install application for upgrading the firmware of a system in col. 8 lines 50-51. It would have been obvious to someone of ordinary skill in the art at the time the invention was made to include an install application in the firmware upgrade of Angelo et al in order for the firmware upgrade to be carried out with a lesser degree of human interaction.

Regarding claim 28:

The rejection of claim 27 is incorporated, and further, Angelo et al disclose a system loader executing a flash application as claimed (“the receiving computer is re-booted, such a by going through another power cycle, and the BIOS information is enabled” in col. 3 lines 38-40. Because

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the firmware is the “backbone of operations of (a) computer,” as stated in col. 1 lines 14-15 of Angelo et al, the boot memory or flash update must inherently have a system loader.)

Regarding claim 29:

The rejection of claim 27 is incorporated, and further, Angelo et al disclose storing the second firmware on the non-volatile memory as claimed (“stores the flash information...in NVRAM” in col. 3 lines 21-22)

Regarding claim 30:

The rejection of claim 27 is incorporated, and further, Angelo et al do not disclose selecting the bootable kernel upon a boot request. Craig et al disclose in an analogous firmware updating system selecting the bootable kernel upon a boot request as claimed (“the network server installs the update boot image on the boot server...the network server then issues a cold reboot command...” in col. 7 lines 20-23). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use to select a bootable kernel in the system of Angelo et al, as this would allow the system to process the firmware update files.

Regarding claim 31:

The rejection of claim 30 is incorporated, and further, Angelo et al disclose a boot request (“a cold boot cycle...” in col. 3 line 33). Angelo et al do not disclose transferring an operating system to a random access memory. Craig et al disclose in an analogous firmware updating system transferring an operating system to a random access memory as claimed (“upon receiving the reboot command...the network computer reboots which causes the network computer to download the

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update boot image" in col. 7 lines 26-29). It would have been obvious to one of ordinary skill in the art at the time the invention was made to transfer an operating system to the random access memory in the system disclosed by Angelo et al, as this would allow the system to process the firmware update files.

Regarding claim 32:

The rejection of claim 32 is incorporated, and further, note the rejection of claim 27. The install application would inherently perform a file system operation, as file system operations are required when an install application attempts to install files.

7. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,859,911 to Angelo et al in view of U.S. Patent 6,266,809 to Craig et al and further in view of U.S. Patent 6,324,692 to Fiske.

Regarding claim 33:

The rejection of claim 32 is incorporated, and further, neither Angelo et al nor Craig et al disclose removing the firmware patch. Fiske discloses in an analogous upgrading system an installation process which directly overwrites or uninstalls previous versions of the software prior to installing the new version in col. 1 lines 15-18. It would have been obvious to someone of ordinary skill in the art at the time the invention was made to erase or uninstall the firmware in the system of Craig et al modified by Angelo et al, as this would free up free up non-volatile memory space for alternate use.

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8. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,266,809 to Craig et al in view of U.S. Patent 5,859,911 to Angelo et al and further in view of U.S. Patent 6,324,692 to Fiske.

Regarding claim 18:

Craig et al teach:

- delivering a firmware install patch containing a boot image (“firmware update operating system is then downloaded to the network computer” in col. 3 lines 43-45)
- within a plurality of networked computer systems (“applicable to numerous network computers” in col. 8 lines 17-18)
- having a firmware version designated for the firmware upgrade (“detects that the network computer firmware is to be updated” in col. 8 lines 41-42)
- initiating an install application contained within the firmware install patch, said install application containing instructions suited to perform the firmware upgrade (initiating the firmware update operating system to update the firmware of the network computer” in col. 8 lines 50-51. Due to the fact that the firmware update is completed by the operating system, the operating system can be considered to constitute an install application.
- modifying an initial system loader in response to the install application to direct a processor to execute instructions from the boot image (“said step of replacing the firmware update operating system comprises the step of reinitializing the network computer so as to load the standard operating system” in col. 8 lines 56-59. Due to the fact that the firmware update operating system is replaced by the standard operating system, it is obvious to conclude that a system loader configuration file must be present on the system, for the purpose of

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dictating where on the system the boot image may be found. This would have to be changed during the re-initialization step on the computer.

- Upon a subsequent microprocessor reset input (“to be loaded at the initialization of the network computer.” In col. 8 lines 54-55)
- Initiating a microprocessor reset input in response to the install application that loads a plurality of instructions in accordance with the boot image (“the network computer carries out the firmware update procedure...then the network computer...reboots and securely loads the normal operating system...” in col. 7 lines 55-61. As is shown, a boot request is received and executed in response to the firmware updating which inherently used instructions in accordance with the firmware update operating system.
- writing the new firmware within each of the plurality of networked computers (“initiating the firmware update operating system to update the firmware of the network computer” in col. 8 lines 50-51.

Craig et al do not disclose a boot disk. Angelo et al teach in an analogous firmware upgrade system the storing of flash information onto a fixed disk. (“stores the flash information such as onto a fixed disk” in col. 3 line 21) It would have been obvious to someone of ordinary skill in the art at the time the invention was made to use include a fixed disk in the system disclosed by Craig et al, as this would allow the user to store information on an alternate non-volatile medium.

Neither Craig et al nor Angelo et al disclose erasing the firmware in response to the install application. Fiske discloses in an analogous upgrading system an installation process which directly overwrites or uninstalls previous versions of the software prior to installing the new

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version in col. 1 lines 15-18. It would have been obvious to someone of ordinary skill in the art at the time the invention was made to erase or uninstall the firmware in the system of Craig et al modified by Angelo et al, as this would free up free up non-volatile memory space for alternate use.

Regarding claim 19:

The rejection of claim 18 is incorporated, and further, Craig et al disclose a firmware install patch comprising a network data transfer (“downloading the firmware update operating system” in col. 8 line 47)

Regarding claim 20:

The rejection of claim 18 is incorporated, and further, Craig et al disclose a firmware install patch comprising an operating system, a file manager, and at least one executable configured to verify the version of the firmware stored in the computer system prior to writing the new firmware (“the update operating system is a boot image of the firmware update...” in col. 3 lines 61-63. A file manager is inherently present in an operating system. Further, “the update process begins by the server determining if the network computer (NC) requires a firmware update...” in col. 7 lines 3-4)

9. Claim 21 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,266,809 to Craig et al in view of U.S. Patent 5,859,911 to Angelo et al, further in view of U.S. Patent 6,324,692 to Fiske, further in view of U.S. Patent 5,901,225 to Ireton et al.

Regarding claim 21:

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The rejection of claim 18 is incorporated, and further, Craig et al disclose the installing of a new operating system once the new firmware is installed (“If the procedure was successful, then the network computer...reboots and securely loads the normal operating system” in col. 7 lines 58-61) Neither Craig et al, nor Angelo et al disclose erasing the firmware in response to the install application. Fiske discloses in an analogous upgrading system an installation process which directly overwrites or uninstalls previous versions of the software prior to installing the new version in col. 1 lines 15-18. It would have been obvious to someone of ordinary skill in the art at the time the invention was made to erase or uninstall the firmware in the system of Craig et al modified by Angelo et al, as this would free up free up non-volatile memory space for alternate use.

Further, neither Craig et al, nor Angelo et al nor Fiske teach the method of installing software patches which require the new firmware. Ireton et al disclose installing software patches which require new firmware (“The patch mechanism advantageously provides a means for finding firmware errors, prototyping fixes to the errors and/or prototyping new functionality of the firmware of the embedded system.” In col. 2 lines 57-60) It would have been obvious to one of ordinary skill in the art at the time the invention was made to require the new firmware for the software patches, as disclosed by Ireton et al, as this would keep the system disclosed by Craig et al up to date at all times.

Response to Arguments

10. Applicant's arguments filed 03 November 2003 have been fully considered but they are not persuasive.

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11. In response to Applicant's argument that there is no suggestion to combine the references, the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the elements being combined are a computer system and a fixed storage device. The motivation to combine these elements, while not explicitly stated in the prior art of record, is considered to be in the knowledge generally available to one of ordinary skill in the art. Hard disk drives have been used in computer since the late 1950's, and their benefits to computer systems include providing a persistent storage solution for storing data, enabling data to be stored locally, and high-speed data access ability, compared to the core memory, tapes and magnetic drums used in computers prior to fixed hard drives. Fixed hard drives also provide a cost-efficient solution for providing storage, as large capacities can be purchased at a cheaper cost compared to using purely solid state memory.

12. Further, in response to Applicant's arguments that Craig et al teaches away from the claimed invention, it is noted that MPEP § 2145, paragraph X(D) states:

"It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983) (The claimed catalyst which contained both iron and an alkali metal was not suggested by the combination of a reference which taught the interchangeability of antimony and alkali metal with the same beneficial result, combined with a reference expressly excluding antimony from, and adding iron to, a catalyst.)."

The Examiner respectfully states that Craig et al, in light of MPEP § 2145, paragraph X(D), does not teach away from the Applicant's claimed invention. While Craig et al is directed to updating

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firmware in a network computer, i.e., “diskless computer,” it does not expressly exclude a fixed disk from being present, nor state that the techniques employed by Craig et al for the purposes of updating firmware will specifically not work if a fixed disk is included in the system. Had Craig et al disclosed such a statement, then Craig et al would indeed teach away from the combination yielding the Applicant’s claimed invention. However, since this is not the case, the combination of Craig et al in connection with the other prior art of record as set forth in the rejection is proper.

Per claim 1:

The Applicant states that Angelo et al do not teach or suggest directing a system loader to instruct a microprocessor to load a firmware upgrade patch, as originally stated in now cancelled claim 2. Accordingly, Applicant states that claim 1 is allowable over Angelo et al for failing to teach or suggest a system loader instructing a microprocessor to load a firmware upgrade patch. The Examiner notes that a system loader as recited in amended claim 1 is inherently present in any computer system including that of Angelo et al, as the computer system would not be able to start without a loader of some sort. Furthermore, Applicant amended claim 1 to only include the limitation of *a system loader*, and consequently, the argument that Angelo et al does not teach directing ... to instruct a microprocessor to load a firmware upgrade patch is considered moot.

The Applicant further states that Craig et al teach away from Applicants claim 1. It is noted that the rejection of amended claim 1 is based only on the disclosure of Angelo et al, and as such, the Applicant’s argument that Craig et al teaches away from Applicants claim 1 is considered moot.

The rejection of claim 1 as anticipated by Angelo et al is maintained.

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Per claim 9:

The Applicant amended the claim to include a bootable kernel, and further states that Angelo et al do not teach or suggest that the flash application comprises a bootable kernel. Accordingly, Applicant states that claim 9 is allowable over Angelo et al for failing to teach or suggest a bootable kernel. However, the prior office action, while stating that Angelo et al do not disclose a bootable kernel, stated that Craig et al disclosed a bootable kernel, and showed a motivation for the combination of Craig et al and Angelo et al for the purposes of combining a bootable kernel with the system of Angelo et al. The Applicant has failed to show that this combination is improper.

The Applicant further states that Craig et al teaches away from Applicant's claim 9. This argument is considered moot in light of the arguments stated above, see MPEP § 2145, paragraph X(D).

The rejection of claim 9 as obvious over Angelo et al in view of Craig et al is maintained.

Per claim 10:

The Applicant states that claim 10 is allowable as being dependent on claim 9, and further that Angelo et al does not disclose a patch memory. Accordingly, Applicant states that claim 9 is allowable over Angelo et al for failing to teach or suggest a patch memory. A patch memory is interpreted to be a piece of software which updates software in memory. It is noted that Angelo et al discloses a flash upgrade ("transferring the flash information from the source computer to the receiving computer, with the flash information including the flash code, and flash code instructions

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and..." in col. 1 lines 58-61). This flash upgrade updates the BIOS of the computer, and as such, constitutes a patch memory. The rejection of claim 10 is maintained.

Per claim 13:

The Applicant states that claim 13 is allowable as being dependent on claim 9, and further states that Angelo et al do not teach or a file management system. Accordingly, Applicant states that claim 9 is allowable over Angelo et al for failing to teach or suggest a file management system. A file management system is interpreted to be an operating system. The prior office action stated that Craig et al disclosed an operating system, and showed a motivation for the combination of Craig et al and Angelo et al for the purposes of combining an operating system with the system of Angelo et al. The Applicant has failed to show that this combination is improper. The rejection of claim 13 is maintained.

Per claims 14 and 18:

The Applicant states that Craig et al teaches away from Applicant's claim 14 and 18. This argument is considered moot in light of the arguments stated above, see MPEP § 2145, paragraph X(D).

The rejections of claims 14 and 18 are maintained.

Per claims 19 and 20:

The Applicant states that Craig et al teaches away from Applicant's claim 19 and 20. This argument is considered moot in light of the arguments stated above, see MPEP § 2145, paragraph X(D).

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The rejections of claims 19 and 20 are maintained.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trent J Roche whose telephone number is (703)305-4627. The examiner can normally be reached on Monday - Friday, 9:00 am - 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703)305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Trent J Roche
Examiner
Art Unit 2124

TJR

KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100